360° SAFE

THE OFFICIAL SAFETY MAGAZINE OF THE NAVY AND MARINE CORPS

Balancing
Risk to Mission
Risk to Force

DECISION MAKING AND PROBLEM SOLVING

risk

ABOUT THE PHOTO:
On the left, DVC Michael West uses the diving safety survey checklist to inspect covered items during an assessment visit. Photo by Visual Information Specialist John Williams.

FEATURES

Environmental Scanning:
Determining Threats to Effect
Positive Change

By Bill White

Think of environmental scanning as your organizational or individual radar that reaches out to help identify what is in your path looking forward, but also helps to identify what is on the periphery. The radar sweep can be focused to a small cone looking directly ahead or it can be a 360-degree sweep, it can look up and down depending on the types of radar used. The important thing to remember is to have a process that allows you to see beyond the immediate.

Another consideration is the frequency or timing of your scan, scans need to be consistent. It is through this consistency that enables you to identify those items out of the norm, or the new blips on your radar. In a time of crisis and once you have identified a target or threat, you can increase the frequency of the scan to help you track the movements of the threat to determine not only which direction it is going but what decisions you need to make in order to mitigate the threat. Andy Hines and Peter Bishop, in their book, "Thinking about the Future," describe it this way: "Scanning is a process of looking internally and externally to identify what is on the horizon that may impact the organization rela-

tive to issues you framed in the prior step." (Switzer, M. n.d.), Understanding what is on the horizon and how it can affect your organization allows you to take the mitigation steps necessary to ensure continued success.

One of the tools that we are familiar with is the strength, weak-

internal or external look at your organization.

Internal environmental scanning could include the personnel posture of your organization. Do you have the appropriate fit/fill to accomplish your mission? Are there any key positions that are vacant or will be vacant

> "Scanning is a process of looking internally and externally to identify what is on the horizon that may impact the organization relative to issues you framed in the prior step."
>
> —Andy Hines and Peter Bishop

nesses, opportunities, and threats (SWOT) analysis. A variation of the SWOT analysis is the strength, weaknesses, unfavorable trends, and favorable trends (SWUF) analysis. While they are very similar in nature, they differ in looking at the future. This can be used to take an

in the near future, important qualifications expiring, or skill-sets starting to atrophy from little or no use? Identifying the internal SWUF early enough allows leadership to make the appropriate decisions to mitigate what could become a problem, after all, who likes surprises at work?

External environmental scanning can include the changes in force structure on the horizon or even updates on weapons systems, changes in the detailing process or future budget considerations. The blips that show up on your radar can be unfavorable or favorable trends due to your current deployment cycle and may not need your immediate attention.

These are just some examples of the challenges or threats you face on a regular basis. The important thing to consider is: do you have a process in place that allows you and your organization to look both internally and externally to identify the important events or actions that require your attention? Not every blip on the radar needs immediate attention or any attention at all. Having a process in place allows leadership to focus on what is important and not get caught up in the white-noise of everything. The added benefit of environmental scanning is to help leadership determine priorities that best benefit the organization in meeting the mission requirement.

Determining what is important, identifying internal and external threats and opportunities lead us to expending our energies on what Stephen Covey calls the "big rocks" theory: clarifying the priorities for the organization and all of the personnel that work there. This clarity brings focus on the efforts that gain the best return and frees up the white space to do the things you would like to do. Things that will help to increase morale and build esprit de corps, like group learning opportunities, team-building exercises, or just some much needed downtime. Identify the big rocks and take care of them, then the "little rocks" will fall into place. ●

Reference

Switzer, M. n.d., What's your future...six steps for gaining strategic foresight, official government resource, *http://www.cpshr.us/documents/resources/GainingStrategicForesight-Switzer.pdf*

Mr. White works in the Operational Risk Management/Expeditionary Warfare Directorate at the Naval Safety Center, where he serves as an ORM training and education specialist.
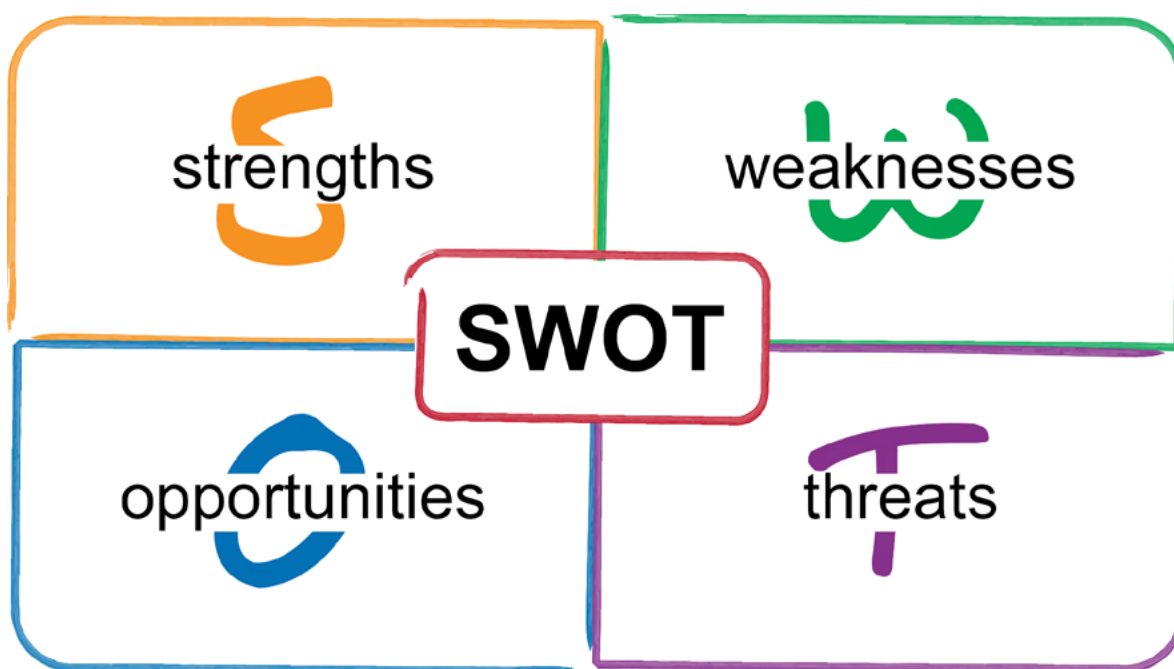
The SWOT analysis

Decision Making and Problem Solving:

Balancing Risk to Mission and Risk to Force

By Bill White

What is something that all of us do on a daily basis? We either make decisions or solve problems. The big question then: Are we making good decisions and effectively solving problems? Many of us make decisions or solve problems without giving it much thought, we just do it. It's not good or bad, we typically have experience in the areas we deal with on a daily basis so the process comes naturally. Do we take the time to ask ourselves: Are the decisions made or problems solved just OK, or could they be better? What if we had a consistent repeatable process that would help us to make consistently better decisions and solve problems more effectively?

Focusing on the decision-making side, the first question is how much time do I have to make this decision? What we are really doing is assessing the situation. This is the first step in the process. The next thing to consider is, what are my resources and how can I balance them moving forward? Once we have assessed the situation and proceed to balance our resources we need to communicate the decision – sometimes that may just be walking it through in our head or at other times sharing it with others. After we assess, balance, and communicate the decision, we next need to just go ahead and do it and see how it works out. Most of us stop there, but

in a high-velocity learning environment we can add an assessment or debrief to see how the decision worked out. Was it OK, good, really good, or was it phenomenally bad and determine what we have, or can be, learned from the decision. If you haven't noticed yet, we have just walked through the ABCD of time-critical risk management; it is a consistent, repeatable process we can use to make decisions, day in and day out, on and off-duty. If we have more time we can incorporate deliberate or in-depth portions of operational risk management, but most of us live in the time-critical phase. The other thing to consider here is the iterations of the process to come to a decision. Many times, as is the case of the ABCD model you can make a number of iterations of the process to come to a decision. The more time you have, the more iterations you can make in walking through the steps of your process, the less time, the fewer iterations. Does it end there? Making decisions is just part of our day; we also have to problem-solve.

Just like with making decisions, solving problems will benefit from using a consistent, repeatable process. The nice thing about problem solving is you have more options or tools at your disposal, so that requires a decision on your part. They are applicable in different areas

Lean/Six Sigma - the idea that everything has a place and everything is in its place. Sort, set, shine, standardize, and sustain are the 5S of Lean; this also establishes processes where you can clearly see if there is a deviation from the norm.

5S of High Velocity Edge (Dr. Steven J. Spear) - See, swarm, solve, share, and spread. See the problem, swarm the experts on it, solve the problem, share it internally, and spread it externally to benefit the organization.

After we assess, balance, and communicate the decision, we next need to just go ahead and do it and see how it works out.

so it is important to get familiar with the tools that are available to you, again, another decision on your part. You see, you just can't get away from decision making!

Some options that come to mind are:

The Scientific Method - which, for you bigger brained people out there, is an equation that you can walk through to create a hypothesis, determine the way you think it should work or probable outcome, gather some examples, test your process, did it work the way you thought or not, and why did it come out that way? If it worked out and you understand why, problem solved. If it didn't work out or you didn't understand why so it can replicate elsewhere, you go back to your assumptions or hypothesis.

These are just three examples of tools you can use to solve problems, other tools to use in helping standardize your processes or functions to aid in problem solving are: plan, brief, execute, and debrief (PBED); plan, do, check, and act (PDCA); or define, measure, analyze, improve and control (DMAIC). Now that you have some resources to assist you in problem solving and decision making the next question is why?

The challenge we face every day is meeting our mission requirements while preserving our people and our resources. If you implemented the previously discussed process in your workspace or at home, it would go a long way in helping you and those around you find that balance of risk to mission and risk to force.   ●

Crowd Sourced

ORM

By LT Stephen Vandal HSM-51

Quarterly safety standdowns are rarely engaging events. Oftentimes, all hands gather in an auditorium or the hangar and a series of speakers lecture the group on the safety topics of the season such as wearing sunscreen in the summer, turkey fryer safety in the fall, and driving in icy conditions in the winter. Many members in the audience slip into a near comatose state as they settle in for another day of dreaded death by PowerPoint. These cookie-cutter safety standdowns are easy to organize and meet minimum training requirements, but the amount they actually contribute to safety is debatable. No new ideas are generated and much of the information presented seems to go in one ear and right out the other. There has to be a more effective use of this time. The Warlords of HSM-51 may have a more productive way to use these safety standdowns: crowd sourced discussions. The rapid advances in communications technology in the past decade have made decisions and idea generation via the masses an effective course of action. By tapping the creativity, knowledge, and experience of a large, diverse group, more unique ideas and solutions can be generated and then evaluated by the masses. This results in the best ideas rising to the top, some of which would never have been developed by any other means.

For the most recent spring safety standdown, HSM-51 embraced the idea of a more engaging and productive use of time by experimenting with the concept of crowd sourced operational risk management (ORM). While several GMT topics were covered, they were completed

operational risk managem

blah
blah
blah

Cookie-cutter safety standdowns are easy to organize and meet minimum training requirements ... much of the information presented seems to go in one ear and right out of the other.

before the audience managed to lose interest. The skipper then presented the agenda for the remainder of the safety standdown. After making a few jokes at the expense of the traditional safety standdown format of sitting through two dozen slides on how to properly care for a Christmas tree in order to prevent a house fire, the commanding officer (CO) brought up the squadron's task for the day. He said, "Consider the most dangerous thing you do. What's the next mishap? What can we do about it"? The skipper wanted three questions answered concerning the most dangerous task and operations encountered in an aviation squadron: Are proce-

Within the groups, discussions stayed on task, walking through the five steps of the ORM process. The first task was simply to identify the mostly likely cause of the next mishap or the most dangerous thing we do in the squadron. The topics produced were quite varied with only a few groups managing to choose the same or a similar topic. Junior enlisted groups mainly focused on liberty related safety issues including driving in Japan, climbing Mount Fuji, and alcohol consumption. The more senior groups chose more operational topics such as aircraft straightening and traversing, pilot to plane captain interaction and signaling, and moving all of the squadron's

For the most recent spring safety standdown, HSM-51 embraced the idea of a more engaging and productive

dures in place? Are we trained to those procedures? Are the training and the procedures followed? The goal of this safety standdown was to get ahead of and prevent future problems by thinking about them beforehand and implementing controls now.

After the opening remarks, HSM-51 personnel broke up into 15 to 20 member sized groups and were assigned meeting locations throughout the squadron. Groups were created based on rank in order to encourage open participation by all group members and help combat any rank-induced intimidation that might be created in mixed group settings. Each group was given free reign to determine which topic they thought represented the potential next mishap and walk through the ORM processes on their own. Representatives from the safety department and the command triad visited the various groups in order to observe their processes and ensure everyone stayed on topic.

aircraft into the hangar at the end of the week.

Once a topic had been chosen, groups continued on with the deliberate ORM process. Group members called out hazards associated with the topic in an open brainstorming session. Once a substantial list had been formed and no more hazards could be identified, the list was discussed and analyzed for probability and severity in order to assign risk-assessment codes. After the hazards were appropriately assessed and prioritized, group members brainstormed different methods to manage the hazards and risks associated with their topics. Finally, the groups discussed various techniques to ensure chosen controls were properly implemented and effective. Throughout the small group period, discussions remained consistently on topic and leaders naturally emerged to ensure the ORM process was followed. Participation was also encouragingly high with

almost everyone contributing at least a few ideas or experiences.

The Warlords reassembled in the hangar after about an hour and a half of group discussion. Each group was then given approximately five minutes to present their findings, walking everyone else through the ORM process they used and the results it produced. It was interesting to see how each group implemented the ORM process. Some of the more junior groups focused on identifying the obvious hazards and basic controls taught to all hands such as always having a buddy when drinking and following the 0-0-1-3 memory aid as a guideline

in the face of rush and change. The constants of checklists, publications, and standard operating procedures are what keep us safe when executing high-risk operations in a dynamic operational environment. If the rules cannot be complied with or there are any questions, the evolution should be stopped and reassessed. He further emphasized that everyone from the most junior blue jacket to the most senior khaki should feel both empowered and obligated to stop any unsafe evolution they observe. No one should push evolutions in an unsafe manner at the risk of personnel and aircraft. In most cases, the benefit of a successful mission or an on-time launch

use of time by experimenting with the concept of crowd sourced operational risk management (ORM).

under the Navy's Right Spirit campaign. Other groups brought up unexpected problems or unique solutions. Even groups that ended up choosing the same topic, such as aircraft straightening and traversing, had such varying perspectives and ideas that the presentations were considerably different while highlighting the same critical risks identified by both groups.

When all the groups had finished presenting, the skipper discussed the results and put his perspective on the event. He highlighted some of the ideas generated by the event that might be implemented by the squadron in the future including additional combined pilot and plane captain training sessions on signals, acquisition and use of wireless ICS cranials by plane captains, and additional training on the use of polar plots for personnel involved in straightening and traversing evolutions. The skipper also emphasized how critical procedural compliance is

does not outweigh a loss of life, limb, or equipment.

HSM-51's new take on the quarterly safety standdown was a success. New ideas were generated to enable the squadron to continue to operate in a safer manner while performing some of the most dangerous evolutions; and squadron personnel were kept engaged instead of falling into post-Thanksgiving-like stupor while listening to tips on turkey fryer safety. In general, crowd sourcing ideas to increase unit safety seems like a much better use of the wealth of experience and brain power gathered in one place rather than another mindless slog through back-to-back PowerPoint presentations on random safety topics. Perhaps this style of safety standdown is not suitable for every quarter, but the positive results generated by the event seems to guarantee the Warlords will implement this strategy again in the not too distant future. ●

SERIOUS MISHAPS

CALL FOR SERIOUS RECORDKEEPING

By Steven W. Geiger

Recordkeeping is a critical part of the Navy's safety and health efforts for various reasons. For one, keeping track of work-related injuries and illnesses can help prevent them in the future. The Navy also has a responsibility under federal law to comply with Occupational Safety and Health Administration (OSHA) regulations. One of these regulations requires commands with civilian employees to notify OSHA.

How does OSHA define in-patient hospitalization? OSHA defines inpatient hospitalization as a formal admission to the in-patient service of a hospital or clinic for care or treatment.

According to OSHA you do not have to report an in-patient hospitalization that involves only observation or diagnostic testing. You must only report to OSHA each inpatient hospitalization that involves care or treatment.

Notification of serious mishaps to OSHA

▶ Within eight hours after the death of any employee as a result of a work-related incident, you must report the fatality to the Occupational Safety and Health Administration, U.S. Department of Labor.

▶ Within 24 hours after the in-patient hospitalization of one or more employees or an employee's amputation or an employee's loss of an eye, as a result of a work-related incident, you must report the in-patient hospitalization, amputation, or loss of an eye to OSHA.

U.S. Navy photo by MC 3 Jesse Monford. Photo is modified and is for illustration purposes only.

How does OSHA define amputation?
This is different than the Department of Defense definition.
An amputation is the traumatic loss of a limb or other external body part. Amputations include a part, such as a limb or appendage, which has been severed, cut off, amputated (completely or partially); fingertip amputations with or without bone loss; medical amputations resulting from irreparable damage; amputations of body parts that have since been reattached. Amputations do not include avulsions, enucleations, deglovings, scalpings, severed ears, or broken or chipped teeth. ●

For more information on OSHA Recordkeeping:
https://www.osha.gov/recordkeeping/index.html

Commands Receive
Top Navy Award
for Safety

By Stan Willingham

Chief of Naval Operations policy requires military and civilian personnel to apply safe and healthful practices in all their daily activities. To recognize outstanding efforts in risk management and mishap prevention, the CNO Shore Safety Awards Program provides recognition to commands with the best overall command safety programs. The awards recognize outstanding contributions to operational readiness and conservation of resources through effective risk management. Congratulations to the fiscal year 2016 Chief of Naval Operations award winners for achievement in shore safety. The following are summaries highlighting the accomplishments of each winner which ultimately led to their selection.

Small Industrial Category – Naval Facilities Engineering Command (NAVFAC) Marianas, Guam.

The commanding officer engaged with employees and ensured a safety philosophy that aligned with that of the Chief of Naval Operations; integrity, accountability, initiative and toughness. An employee safety committee was initiated in the safety occupational and health program; its implementation empowered personnel and promoted safety communication amongst leadership. The command successfully reduced their days away, restriction and transfer (DART) by 50 percent from fiscal year 2013 to fiscal year 2016. They developed a contractor safety handbook, which provided resource information pertaining to the safety responsibilities to contract personnel.

Medium Industrial Category – Trident Refit Facility, Kings Bay.

Their emphasized motto of "Ten Fingers and Ten Toes," though simplistic was highly effective in instilling in each employee the responsibility to finish each workday and go home safely. Leadership is aggressively pursuing safety

Category	Winner
Small Industrial	NAVFAC Marianas, Guam
Medium Industrial	Trident Refit Facility, Kings Bay, Georgia
Large Industrial	Fleet Readiness Center Southeast
Small Non-Industrial	Naval Diving and Salvage Training Center, Panama
Medium Non-Industrial	Naval Base Point Loma
Large Non-Industrial	Naval Postgraduate School, Monterey
Fleet Operations/Support	Tactical Training Group Atlantic

The commanding officer, executive officer and command master chief made safety a top priority. This triumvirate is constantly present in the facility interacting with personnel. Leaderships' open-door policy instills informal reporting and fosters communication. Their implementation of a very comprehensive and strictly enforced heat stress program resulted in zero heat-stroke cases from fiscal year 2014 to fiscal year 2016. Safety is embraced as part of training, become internalized and is part of all planning processes.

Medium Non-Industrial Category – Naval Base Point Loma

In this command, safety is a team-sport mentality. Organizationally all members are fully engaged in OSH programs with mishap prevention being the key goal of their efforts. An integrated team approach is used for all command and community events ensuring they are executed safely. Leadership supports the commands' robust safety council in identifying, informing and implementing corrections to identified hazards. All of their measureable mishap rates (i.e., TCIR and DART) have trended downward for the last three fiscal years.

Large Non-Industrial Category – Naval Postgraduate (NPS) School

This command had the perfect blend of outstanding leadership, personnel involvement combined with a commandwide commitment to safety which led to their selection as the category winner. Leadership was constantly visible as they conducted walkabouts showcasing safety in ongoing projects. Safety communication, interface and outreach remained constant within the NPS faculty and staff. NPS's mishap trends show a reduction within all areas indicating positive direction in safety culture enhancement.

The fiscal year 2017 Chief of Naval Operations Award for Achievement in Shore Safety competition starts Oct. 1, 2017. Congratulations to the fiscal year 2016 winners. ●

excellence by implementing OSHA's voluntary protection program (VPP) guidance principles working toward their Safety Through Awards and Recognition (STAR) program certification. They achieved a 45 percent decrease in their total case incident rate. Great effort to ensure safety program and concerns are transparent to and throughout the entire command.

Large Industrial Category – Fleet Readiness Center Southeast.

A safety management system was implemented which contributed to building a culture of senior leadership and worker participation, thus ensuring a safety culture throughout the command. By doing so the command achieved "Bronze Status" recognition for all the accomplishments performed. Their significant accomplishments included vastly improving the fall protection program by acquiring and utilizing state-of-the-art fall protection equipment; a new employee safety concern reporting system was implemented, which raised the awareness of safety hazards and, in turn, decreased their days away, restriction and transfer (DART) rate substantially to 1.66.

Small Non-Industrial Category – Naval Diving and Salvage Training Center, Panama

....
Mr. Willingham is a Safey & OCC Health Specialist in the Shore Safety Programs Directorate at the Naval Safety Center.

Knock It Off?
One Squadron's Methodical Approach to a Snowy Troop Lift

By Maj Matt Collier, HMLA-773

One of the hardest decisions as an aircraft commander or flight leader is whether or not to call knock it off and head back home. We've probably all seen knock it off calls that were debatable. On one end of the spectrum are the ones made prematurely or out of laziness. On the other end are the calls made too late or not at all. The right answer lies in the middle somewhere (to paraphrase Aristotle). This is the story of a series of events I believe were a textbook example of operational risk management (ORM), leading up to a knock it

off call that was absolutely the right decision. Spoiler alert: nothing bad happens in this story. I know we're used to learning only from what went wrong in aviation safety, but I think it can be just as helpful to learn from what went right.

First, some background on our unit is necessary. HMLA-773 is unique in two big ways: it is a reserve squadron and it is dual-sited. HMLA-773 is based out of Joint Base McGuire-Dix-Lakehurst (JB MDL), New Jersey Detachment (Det) A is based out of New Orleans. Fluid cross-pollination

of flyers and maintainers between the two sites is encouraged, and that sets the background to this event.

A formal symposium was scheduled for a January drill weekend at JB MDL to discuss existing and emerging concerns associated with the UH-1Y, which is still relatively new to Fourth Marine Aircraft Wing (4th MAW), having been introduced in 2014. All squadron Huey pilots and aircrew were in attendance, active and reserve from both sites.

Another big event was also scheduled for Saturday of drill weekend.

This was a large-scale insert and extract of 1-114, a local National Guard infantry unit. This was the unit's first helibourne assault attempt in years.

The plan for drill weekend was complex on its own. Throw weather into the mix and things get even more interesting. Storms in the South delayed the arrival of Det A personnel, meaning the symposium slid from Friday night to Saturday. A bigger issue was a winter storm that hit JB MDL Saturday and left five inches of extremely fine and powdery snow. The Saturday flight schedule was cancelled by higher meaning the Army insert would get briefed Saturday evening, after the symposium, and would be executed Sunday morning.

The flight leader was Maj Jake Olson. As he sat in the symposium with the snow piling up outside, he thought through all the different factors affecting Sunday's mission: snow, crews not familiar with each other, limited experience with whiteout conditions, an Army unit not familiar with helos, higher gross weight than normal, more aircraft than normal, etc. His conclusion: this mission could be executed safely with proper controls, but it was medium risk, possibly even high.

This brings us to the 4th MAW risk assessment worksheet (RAW). The RAW is a two-sided piece of

paper filled out by the flight leader and signed by everyone flying that particular mission. It is designed to

help the flight leader apply ORM to the upcoming mission. Low-risk missions require no further action. Medium-risk missions need the blessing of the squadron commanding officer (CO). For high risk missions, the RAW is brought to the Marine Aircraft Group CO so he can review the planned controls and give final approval for the mission. In the past, the RAW has been criticized by pilots (including myself) for being nothing more than a robotic check in the box. This criticism was mainly because the acceptance of risk rarely goes above the flight leader level and the flight leader shouldn't need a piece of paper to exercise ORM. In this situation, the RAW (rightly) brought increased scrutiny of the mission and made everyone think hard about what could be done to make an unsafe situation safe. It was a good reminder to us about the importance of airtight ORM. The RAW proved its worth.

The mission was ultimately approved on Saturday night. So what controls had the squadron implemented the day prior to set the mission up for safe execution? The primary control was crew construction. With Det A flyers on hand, there was a wealth of knowledge and experience available. Eight weapons and tactics instructors would be spread out across the five aircraft and, of all the flyers, 10 years of experience was the average. Some had landed in whiteout conditions before, most had not. Regardless, these pilots and aircrew were experienced enough to know their own limits and not exceed them.

Between Saturday night and Sunday morning, the squadron, especially the maintenance department, worked hard to overcome the obstacles put in place by the snow. It would have been easy to just cancel the mission and some probably expected that to happen. Multiple excuses were available, especially since a lot depended on external agencies who didn't care whether we flew or not. But squadron leaders wanted to make sure the final decision remained with the operators and not with, say, the base plow driver who didn't know which areas

of the flightline to plow. The diligence paid off and the crews walked to the aircraft as planned.

One final piece of information was needed by Maj Olson before determining whether or not to execute the mission. He wanted to test the conditions by conducting single-ship takeoffs and landings in the local pattern. With most of the flightline and runway still lying underneath a blanket of fresh snow, pattern work would be a good indicator of what the crews could expect in the landing zone. This was part of the crawl, walk, run approach that had helped get the mission approved.

The initial hover and taxi by Maj Olson's aircraft sent a cloud of snow covering the entire ramp. It was two or three minutes before the powder settled and the spectators lining the perimeter of the hangar could see the aircraft again. After about 10 minutes of whiteout landings to the taxiway, Maj Olson made a call over the squadron's base frequency: "Base, Red Dog 11 is taxiing back into the line. Tell 1-114 we're cancelling the mission." The crew taxied back in and shutdown. They re-entered the hangar and found members of the squadron who were interested in hearing about the conditions, not upset that the mission was cancelled. There wasn't any criticism since there had never been any undue command pressure. Everyone understood this just wasn't the day to push it.

From my point of view in the ASO seat, the system had worked over January drill weekend with no over controlling. A CO can set his crews up for success by ensuring a safe and legal flight schedule, but the rest is in the hands of their judgment. There needs to be an environment of trust. The CO has to trust that his pilots to buy into the system (proper ORM, using the RAW, etc.) and make smart decisions. In return, pilots and aircrew have to trust that when they try their best to do the right thing, the CO will have their back. In an atmosphere like this, you can expect thoughtful decision-making and an overall safer tone. ●

IT'S NOT OVER
UNTIL IT'S OVER!

By LCDR George Degennaro VFA-83

It's the middle of April in the North Persian Gulf. The air wing has been on deployment since the middle of November and flying sorties in support of Operation Inherent Resolve (OIR) since late December. We're pulling into Dubai in the morning for the third time, but between now and then my wingman and I have been tasked with one more seven-hour close air support mission in Syria.

After giving the mass brief, my wingman and I head back to the ready room in order to brief our element specifics. As you might expect by month six, I brief admin and tac admin as largely standard. We do take a few minutes to talk about the impending Case III recovery and the basics of the CV-1 approach that I expect us to shoot. We also cover operational risk management (ORM) for the flight to include fatigue following a seven-hour combat flight, complacency as we look toward our currently scheduled and fast approaching departure from the AO, and, of course, the fact that it's the last scheduled event prior to pulling into port. After that, the main focus of the brief is on the OIR mission and weapons employment.

We launch on time, complete our mission in accordance with our tasking, and begin the return to the ship. We meet our final Air Force tanker and take our gas for the return to base (RTB). As I contemplate the fuel/time/distance problem in order to make the recovery, I recognize that we're going to be a few minutes late and will likely return in time for the tail end of the recovery but definitely won't make it back for the initial pushes from marshal. Sure enough as we check in with marshal, we hear the last of the stack commencing on the CV-1. I detach my wingman so that we can each receive radar vectors to a right downwind instead of executing the standard recovery.

The weather is nice and the quarter moon is above the horizon but I ultimately decide around this point that I'm going to execute a Mode 1 approach. After configuring my jet for landing and getting a hook to final bearing, my approach controller confirms that he has my aircraft locked up at 5nm and asks me to say needles. I confirm that I am showing On and Up meaning I am on centerline and below glide path which is to be expected. Once we verify we're each seeing the correct indication, I couple up to let the SPN-46 radar do the work. At 4nm, the controller reports he's dropped the radar lock and I take over manually until he is able to reacquire just prior to tipping over from 1,200 feet at 3nm. After going through the mode 1 couple procedures and communications one more time I again let the radar and the jet take over while following the controls with both hands in case I have to take over again.

The approach is one of the smoother mode 1s I've seen to this point and seems to be keeping up with both glideslope and azimuth. At 3/4 of a mile I make the ball call and report coupled to paddles. As I follow the control inputs to the in close position I start to feel that I'm now slightly right of centerline but still on glideslope. I also recognize that since I'm not doing the actual work, my normal scan is a little slower than I'd like. As that thought crosses my mind, I see an E-2C Hawkeye parked in the "hummer hole" that is getting larger in my peripheral vision than I'd like and notice my jet is no longer making corrections back toward centerline. By this point I'm at the ramp. I click out of auto throttles and uncouple from the mode 1 so that I can stop the drift with a big left wing down correction. I'm now well right of centerline and no longer drifting further off course, but unsure if my wing down correction is enough to keep from crossing the foul line. During this final two to three seconds of the flight, my left hand on the throttle hasn't moved as I've been so focused on the centerline corrections and when I trap it stays at mid-

The bottom line is no matter how long the flight is, how smoothly it seems to go, or how ready you are to land and get mid-rats, flying around the ship is a dangerous business that requires constant attention at all times.

range for longer than paddles likes. As I roll out (right of centerline but thankfully inside the foul lines), I get a stern call from paddles about my throttles which I then move up to mil power.

Mostly happy, I haven't put my right wingtip across the foul line into the E-2C or any of the Hornets in the 6-pack, I taxi out of the landing area and shut down. Upon reviewing both my tapes and the SPN-46 data with the air operations officer, it appears the SPN-46/jet combo stops making lineup corrections just prior to the in close position but, due to my scan breakdown, I don't recognize and subsequently take control until at the ramp. Following further analysis by the carrier certs team back in the U.S., the blame is put on the jet's ACLS beacon, which is replaced by maintenance.

The bottom line is no matter how long the flight is, how smoothly it seems to go, or how ready you are to land and get mid-rats, flying around the ship is a dangerous business that requires constant attention at all times. At no point can you let your guard down, especially when what you're doing no longer falls into the standard category. ●

Institutionalizing ORM at the Squadron Level

By making the ORM portion of the NATOPS brief a group discussion, crews have been able to increase the level of preflight and on-station decision making.

By CDR Joe Levy, VP-5 CO

Having recently returned from a challenging split-site deployment, including the first deployment to 5th Fleet for the P-8A Poseidon, VP-5 has completed a campaign to institutionalize the use of operational risk management (ORM) in our pilots and naval flight officers that began early on in our home cycle. We have seen a notable improvement in the quality of our aviators' decision-making ability, and we hope that a few observations on what worked for us may help any squadron interested in strengthening the way their operators manage risk.

At the beginning of our home cycle, many operators were confusing ORM with crew resource management (CRM), and ORM training was generally limited to meeting GMT requirements. Through a methodical campaign plan over the last 18 months, we have been able to transform ORM from a program to an ingrained element of our culture.

We started by upholding the four principles of ORM in our foundational documents – commanding officer's (CO) philosophy, senior pilot guidance and safety policy. In order to breathe life into these words on paper, we first focused on the academic knowledge required to be able to apply the concepts and principles. We knew that in the same way we study bold face procedures in order to be able to confidently apply them in flight, we needed to ensure everyone actually knew the four principles of ORM if they were ever going to effectively apply them at 250 KIAS.

We used our weekly training days to instruct aircrew on how to functionally use ORM to make decisions in flight, putting senior operators, including the CO, on the scenario hot seat demonstrating how to apply the principles to make good decisions. After repeated examples in the classroom environment, our aircrew began to understand how it works.

Our approach centers on analyzing in-flight decisions in terms of probability as opposed to severity, and applying the four principles. We tend to shy away from the five-step process in flight due to the time critical nature of most decisions, unless time allows. We also emphasize the need to enter into the decision with objective, unemotional input because emotional input results in emotional output, even if the decision making framework is perfect.

For example, early on in the inter-deployment readiness cycle, we had a crew elect to make an emergency overweight landing after they detected fumes in the tube and some members had gone on O2. Even though the fumes were no longer present, they elected to make the emergency landing because a crew member felt mildly unwell. We debriefed the scenario corporately, not to embarrass, but to learn. As we replayed it at zero knots, we considered the probability of a reflash occurring that would prevent a safe landing was very low because the aircraft was in the terminal area, where there was sufficient visibility. It was also clear that there was low probability of serious illness of any crew members. The severity of a crew member not feeling great was also low,

as was a reflash because, in part, the initial event never affected the flight station.

It became clear that the benefit of an expedited landing did not outweigh the cost of potentially damaging the aircraft and downing the plane for weeks if the sink rate at touchdown was too high. It became clear that the risks could be anticipated and managed through planning. Examples like these are numerous. Through regular, objective, non-punitive analyses of cases like these in terms of ORM principles, light bulbs began coming on all over our squadron spaces.

Our leaders also began to model ORM before flights not as a checklist or score sheet but as a discussion. Before each flight or simulator, our crews discuss the risks to both mission and safety, and what they can do to mitigate them. By making the ORM portion of the NATOPS brief a group discussion, crews have been able to increase the level of preflight and on-station decision making.

Additionally, we began holding our aircrew fully accountable for this concept during all PPC, TACCO, and MC boards and check-rides, requiring the demonstration of the ability to use ORM to work through a scenario and reach a sound decision. We have been able to see a transformation from initial confusion between ORM and CRM to seeing leaders conduct analysis in terms of the four principles.

We have observed that when upgraders know that they will be expected to demonstrate the use of ORM to make an operational decision on their training events, they prepare ahead of time, and our PPCs and TACCOs teach ORM to their upgraders from their own experience in order to help them be successful. Throughout our deployment, we witnessed a succession of sound, ORM-based decisions and I can confidently say that there was not one decision made by any PPC, TACCO, MC, or officer in charge that I ever disagreed with, and our operational commodores routinely seconded this sentiment.

Our next frontier in our campaign plan is to bring our approach into the maintenance department. Our maintainers have higher baseline knowledge of the five steps of ORM than aircrew because their knowledge is typically spot checked at MPA and AMI. Through similar training efforts such as scenario-based discussions during safe-for-flight and plane captain boards, we know that every VP-5 Mad Fox is employing ORM to keep the squadron safely on track. Like our aircrew, though, they were less familiar with the principles behind the process, so we are working on filling in these knowledge gaps using some of the same methods that were so effective with our aircrew.

We received volumes of anonymous feedback on our MCAS/CSA survey affirming that our Sailors recognize what we are doing and have bought into the benefits and effectiveness of regularly using ORM. In successfully institutionalizing ORM at all levels of our operations, we have equipped our aircrew and maintenance team to make quality decisions. This not only underpins safe operations, but makes us more effective on station. ●

CDR Levy is the 66th commanding officer of VP-5.

Human Factors
Contribute to Near Mishap

By AE1 (SG) Michael Apgar

Accidents happen all the time in the workplace. The aviation world is no exception, with countless possibilities and situations that can cause damage to equipment and hazards to personnel. According to the Federal Aviation Administration about 80 percent of accidents happen due to human factors. The FAA has identified 12 human-factor situations and has named them the "dirty dozen."

The dirty dozen are categories of the 12 most common human error conditions that could lead to an accident or incident. These categories include:

1. Lack of Communication – Poor transmitters and receivers can cause dangerous situations in the workplace. Use of logbooks and pass downs are a good start to avoid lack of communication, but clear and accurate pass downs avoid confusion and potential errors.

2. Complacency – When a situation becomes habitual, the level of caution and situational awareness is diminished.

3. Lack of Knowledge – Having someone complete a task without the understanding, proper training, or incorrect knowledge of how to complete the task correctly and safely.

4. Distraction – This could be anything that takes the attention away from the current task.

5. Lack of Teamwork – In certain situations tasks may need multiple personnel to complete. If someone isn't contributing fully on the task, this could lead into a dangerous situation.

6. Fatigue – Physical or mental tiredness. Being chronically fatigued can lead to poor concentration, remembering, and decision making. Additionally, as maintainers at VR-61, we experience flexible missions requiring multiple shift changes to maintenance personnel.

7. Lack of Resources – The necessary equipment is not available or utilized to complete the job safely.

8. Pressure – Each person can handle different amounts of pressure. Pressure can be created by the amount of work someone can handle, how much time they need, or even lack of resources.

9. Lack of Assertiveness – By allowing oneself to become intimidated can cause a dangerous situation, i.e., not communicating all the information clearly or cutting corners to avoid conflict.

10. Stress – There are many different types and levels. From environment, to personal, and health, those are just a few examples from dozens of forms of stress.

11. Lack of Awareness – A person can be so fo-

While no personnel injuries or property damage were reported, the incident could easily have been prevented.

Fire bottle carts are a necessary part of aircraft maintenance safety. However, without proper operational risk management they could be dangerous if not locked in place properly.

cused on a task he may be oblivious to the environment around him or her.

12. Norms – Statements like "It's just the way we do things around here," are unwritten rules around the workplace. Some norms are force of habit and/or peer pressure.

In late September 2016, VR-61 at Naval Air Station Whidbey Island, experienced a near mishap. VR-61 operates C-40A aircraft conducting Navy Unique Fleet Essential Airlift missions around the world.

The morning of the event, maintenance control tasked three highly motivated airframers to align two fire bottle carts positioned in the back of VR-61's hangar. The team consisted of two second class petty officers as observers, handlers, and guides; and a third class petty officer as the support equipment operator. The equipment used for this evolution included an A/S32A-48 tow tractor and two commercially obtained AFFF fire bottle trailers. These trailers each weigh approximately 12,000 pounds and support firefighting requirements when conducting offsite aircraft maintenance. Before the evolution, the team reviewed the location and desired placement of the trailers. The movement of the first trailer was successfully completed without any issues. The second trailer movement was the greater challenge based on its initial position inside the hangar.

Slowly, safely, and as a team they pushed the second trailer outside the hangar until they gained enough clearance to maneuver the trailer into its final position. Once they had the appropriate clearance, they carefully shifted the tow tractor into drive to execute a near 90-degree turn of the trailer to align it with the first one. Once the trailer was in its correct location, the team moved to the next step of removing the tow bar.

Before the trailer could be disconnected from the tow tractor, one of the observers slowly jacked down the tongue jack. Once the tongue jack was fully retracted and appeared to be secured, the petty officer moved to the front of the tow bar to demonstrate and assist the other petty officer with unlatching the tow tractor's locking mechanism from the trailer tow hitch. Unknowingly, the locking pin on the tongue jack had not been installed and upon release of the locking mechanism, the fire bottle trailer's front end hit the deck and the entire cart rolled backwards. Both petty officers investigated the unintended movement and discovered the locking pin for the tongue jack was never installed. The weight of the trailer and the unrestrained condition created a potential hazard of property damage and a danger to personnel.

While no personnel injuries or property damage were reported, the incident could easily have been prevented.

During the post-evolution hot wash, the team concluded that personnel should have ensured the locking pin was securely in place, and chocks were installed to prevent the trailer from rolling backwards when unlatching the tow tractor's locking mechanism. The team also made great recommendations including the installation of a spring-loaded locking mechanism on the tongue jack and/or affix a warning placard to properly install the locking pin to secure the jack in place.

The human - errors in this incident or any can be caused by a single dirty dozen infraction or multiple ones. Hazards like these can be identified and mitigated by practicing operational risk management (ORM), which is key to preventing mishaps. By applying the principles of ORM to each task, personnel can recognize hazards and create actionable plans to mitigate potential injury to personnel and property damage. ●

ORM in Absentia

By CAPT (Sel) J. Lee Bennett

Many of the mishap and hazard reports received at the Naval Safety Center from the afloat community (surface ships and submarines) have some common human-related factors; most notably among them is the lack of proper supervision. The root cause behind these incidents have been debated amongst scholars, leaders, and Sailors for many years (i.e., supervisors are overloaded with collateral duties and paperwork to watch all of their subordinates all of the time, Sailors are not as well trained today as they used to be, millennials have a different perspective than their predecessors, etc.). While all of these reasons can be debated further as to their legitimacy, it is important to first clarify what lack of proper supervision really means and its impact on fleet readiness.

Some may see that statement and assume it means hand-walking a Sailor through each step of a maintenance requirement card (MRC) or standing over the Sailor's shoulder while they are on watch. In certain cases, these steps many be justified (such as a freshly qualified maintenance person conducting a specifically difficult check for the first time). However, for obvious reasons, this approach is not always required, desired, or achievable – nor should it be. But there are some simple steps each leader should take to ensure things

Moreover, these orders outline every maintenance and troubleshooting effort across the command so everyone, from the commanding officer down, is aware of the five W's (who, what, where, when, and why). Not only does this instill a culture of awareness and coordination among the duty section personnel, it also empowers the command duty officer during their nightly rounds and oversee these events while they are happening.

In addition to daily night orders, another method of providing adequate leadership when the leader cannot be present is to use the supervisor's quality and quantity control (SQ2C) method. Simply put, a leader can increase the level of safety assurance by injecting a quality/quantity control checkpoint prior to the start of a planned procedure. Basically, every maintenance and preservation task has three components: training, tools, and time. Ensuring each Sailor has the quality and quantity of these three T's prior to commencing their work can prevent a large number of mishaps.

While the SQ2C method may appear to resemble the well-known material maintenance management (3M) spot-check, it is less official and more of a 10-minute discussion on expectations. For example, the Sailor car-

> ## The keys to preventing future mishaps due to a lack of proper supervision are increased communication and coordination.

are being done correctly, even when they cannot be present on the deckplates.

One of the many benefits of working at the Naval Safety Center is the interaction with counterparts across the other warfare areas. As a career surface warfare officer, my knowledge level of daily workings within the air, sub, and special warfare communities is limited to just a general understanding of what they do. Since arriving here two years ago I have had several "ah-ha" moments where I wondered why my community does not do things the same way. For example, the submarine community uses night orders while in port in addition to underway.

rying out the task must have been properly trained. The questions a leader should ask at the SQ2C checkpoint prior to giving their consent are: Why are you doing this? How will you do it? If the reply is "I'll just follow the MRC," then the leader must ensure the Sailor fully understands the procedure and is capable of executing it without any confusion.

Next, the Sailor needs to have the proper tools, parts, and materials required to do the job correctly. What are you using to do this? A quick review of these items by the leader can prevent some simple mistakes;

Maintainers assigned to VFA-211 work on engine-oil servicing units (PMU-72E). U.S. Navy photo by Visual Information Specialist John W. Williams

such as using the correct protective gear, type of grease, or size of chain.

Finally, the Sailor needs ample time to do the procedure. What is the next event you have today? If it is a 60-minute check and they have watch in 45 minutes, are they going to rush through the steps and possibly skip something important? How much sleep did you get last night? If they had the mid-watch, rolled right into morning quarters, then sat through two meetings before coming to the SQ2C checkpoint, then maybe the risk-management numbers are not in their favor and the task should be delayed or given to someone more clear-minded.

The keys to preventing future mishaps due to a lack of proper supervision are increased communication and coordination. If the Sailor and the leader are communicating (SQ2C checkpoint) about the pending task and the various leaders are coordinating their efforts at a higher level (night orders), then the entire command will benefit through the preservation of combat readiness and the saving of lives. ●

CAPT (Sel) Bennett is Director of the Afloat Safety Programs Directorate at the Naval Safety Center.

ON THE WEB: *NAVY SELF-ASSESSMENT REPORTING*

http://www.public.navy.mil/NAVSAFECEN/Pages/OSH/nsar-index.aspx

Deckplate Compliance or Systemic Failure?

By CAPT (Sel) J. Lee Bennett

Modern-day warships are a network of technologically advanced and complex systems, with each nested subsystem having its own unique techniques and procedures for how to maintain the supporting equipment or respond to malfunctions and failures. However, procedures currently utilized by the fleet (i.e., planned maintenance and casualty control) are typically written to deal with a singular task or issue and assumes the Sailor's actions will only affect that particular piece of equipment. As such, these procedures fail to take into account other issues within that subsystem or the networked shipboard environment as a whole. Therefore, the human factor is required to think critically and sort out second and third-order effects of their intended actions.

The difficulties associated with mentally navigating multiple layers of complexity are compounded when systems are not fully operational. In those cases, the Sailor has to rely on combinations of multiple procedures in order to control the situation and prevent the possibility of a cascading casualty. Furthermore, Sailors must contend with documentation that is often times out of date, conflicting, or missing altogether. Therefore, we need to answer two questions: How much information is one Sailor expected to absorb and instantly recall in a constantly changing and highly-complex environment? And, at what point does too much information become cognitively and physically degenerative?

While theoretical studies regarding the amount of information a human can absorb before their decision-making ability becomes impaired can be traced back to the 1960s, groundbreaking empirical studies began being published around the 1980s. Later, two organizational theorists consolidated both approaches in their 2004 article, The Concept of Information Overload. Their paper shows a central agreement among researchers that "the performance (i.e., the quality of decisions or reasoning in general) of an individual correlates positively with the amount of information he or she receives – up to a certain point. If further information is provided beyond this point, the performance of the individual will rapidly decline." Once information-processing capacity is surpassed, "additional information becomes noise and results in a decrease in information processing and decision quality."

Other studies stress the time factor as the most important issue regarding the information overload problem. Since time is "an intrinsic factor due to its direct effect on information overload," responding to an emergency reduces the possibility of conducting proper research prior to taking initial actions. Meaning, a person must then rely on their own training and experience, hoping that they have not unintentionally caused a negative chain-reaction. Essentially, if the quantity and complexity

Equipment Status
Directives
Other Factors
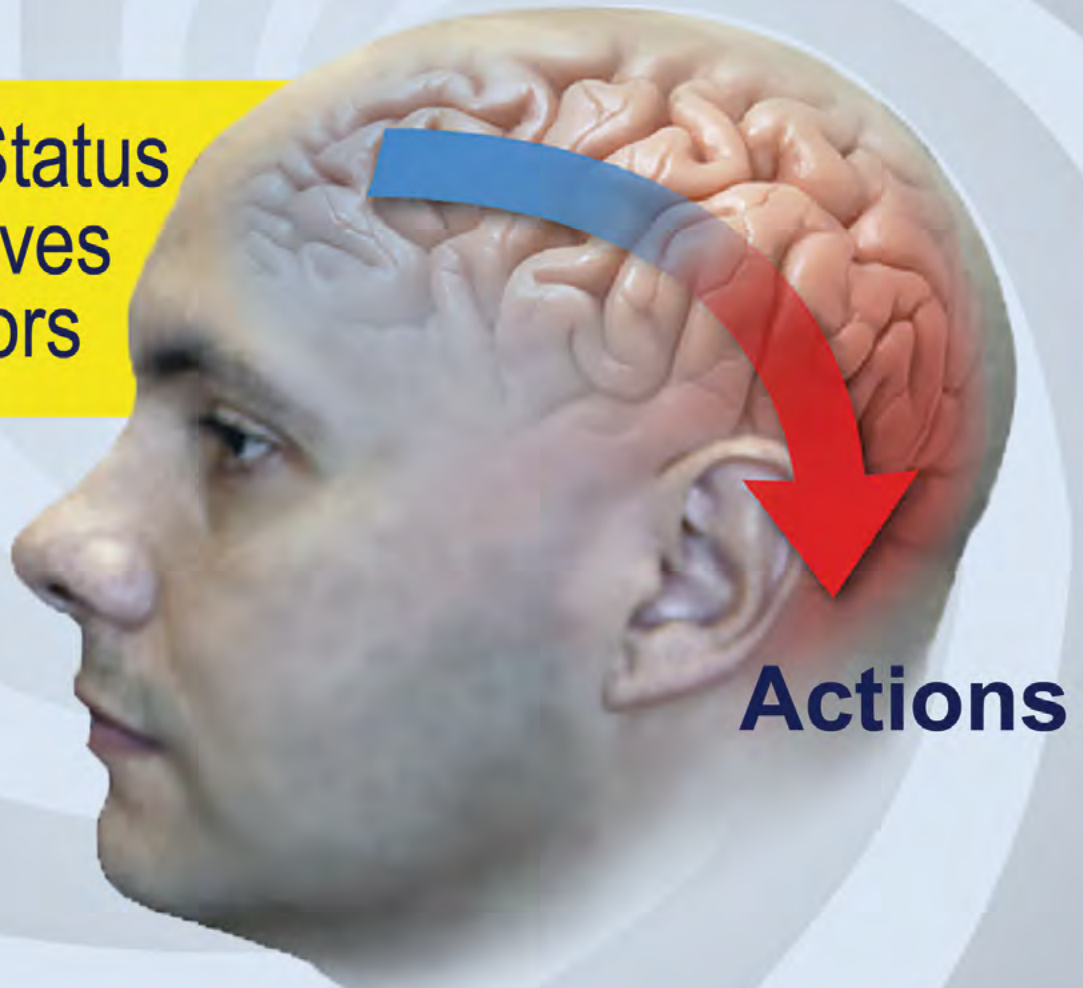
Actions

"Success does not depend on a single event, just as a catastrophe does not depend on a single failure."
— Dr. Steven J. Spear
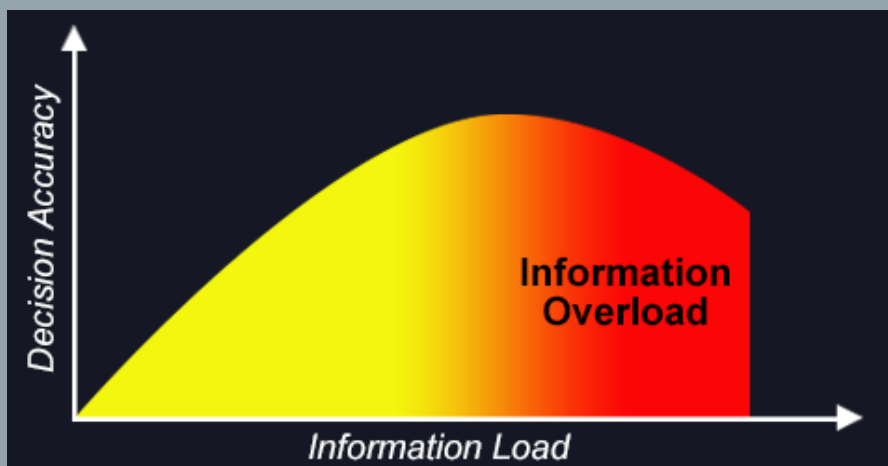
Information overload as the inverted U-curve.

Information Fatigue Syndrome

There were 5 exabytes [5 billion gigabytes] of information created by the entire world between the dawn of civilization and 2003, now that same amount is created every two days. ... And, by the way, the growth rate is, of course, accelerating.

— Eric Schmidt, former CEO of Google

of the information required to complete a task exceeds the individual's ability to integrate it all into proper actions within a given time, then information overload has been reached and the person's decision-making performance will decline.

Factors that signal the occurrence of information overload are the feelings of stress, confusion, pressure, anxiety, and low motivation. In addition to the short-term cognitive restrictions on an individual's immediate performance, the long-term effects of information overload on a person are very similar to stress-related mental and physical illnesses. One study shows that 25 percent of workers

Institutionalized Chaos

Heavy information load will confuse the individual, affect his or her ability to set priorities, and make prior information harder to recall.

—Martin J. Eppler and Jeanne Mengis

and 36 percent of managers experienced and reported health issues as a direct result of the excessive information required to do their jobs. Mental health practitioners refer to this condition as information fatigue syndrome and its presence is clearly evident in today's fleet.

Mishaps in the past few years have resulted in billions of dollars in damages within the fleet. Subsequent investigations routinely point toward similar human factors (HFACs) as root causes: lack of training, supervision, and communication, or simply not following procedures. When reviewed individually, these HFACs seem adequate and appropriate. However, taking a step back and reviewing them collectively reveals a much larger systemic problem.

Sailors are at risk of saturation with too much

information (sometimes conflicting or outdated) regarding the ship's materiel condition and the subsequent work-arounds for those deficiencies. All this additional information can be difficult to absorb on a routine basis and can border on the impossible in a casualty condition. Dr. Steven J. Spear states in his book, The High-Velocity Edge, that high-velocity organizations "understand and solve problems, not put up with them," whereas the fleet not only puts up with its persistent problems of information overload, it has institutionalized them.

A 2016 review of the U.S. Navy's Arleigh Burke-class destroyers revealed some distressing statistics. According to a data call in conjunction with this review, on average, those ships had 25 active casualty reports, 21 active temporary departures from specifications, 16 active temporary standing orders and a backlog of 1,930 job sequence numbers) per vessel. The compounding effect all these work-arounds have on Sailors is clear – they produce an environment in which complexity clouds their minds and inhibits or delays proper actions. Instructions require Sailors to fully understand the condition of all equipment prior to taking their watch. If each destroyer has, on average, over 2,000 deficiencies with work-arounds, and an unknown number of [alternatives] "Sailor Alts", can they truly understand the condition of their equipment? Such was the case in a 2016 ship fire caused by a can taped in place inside an electrical control box in order to keep a ventilation switch in the "on" position.

In today's fleet, fewer people, inconsistent maintenance funds, and higher operational tempos come together to form conditions that encourage a climate of "just make it work" and "do whatever it takes to pass the inspection." Dr. Spear described this mentality more succinctly when he wrote, "If you define a problem only in terms of whether you have adhered to the standard, you set a low bar for a pass, but if you define a problem by the much more rigorous criteria of whether work is being done without delay, without waste, and without strain of any kind, you set a much higher bar and create more reason to try to improve on what you are doing." Working around problems does not fix them – they continue to exist in increasingly larger numbers and complicate the Sailor's ability to take proper actions. In this environment, information overload will continue being at least a contributing factor, and quite possibly the real root cause, of mishaps until corrected. ●

Going out for just a few?
STOP
and think before you decide:
"It's only another drink"

1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR. 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR. 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER WORKER, 1 MIXED DRINK, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 BEER, 1 CAR, 1 EIGHT HOUR, HOUR DAY, 1 TIRED 1 BEER, 1 CAR, 1 EIGHT EIGHT HOUR DAY, 1 TIRED DRINK, 1 SHOT, 1 BEER, 1 CAR 1 1 EIGHT HOUR DAY, 1 TIRED DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, DRINK, 1 SHOT, 1 BEER, 1 CAR 1 EIGHT HOUR DAY MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR 1 EIGHT HOUR DAY MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR 1 EIGHT HOUR DAY MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR 1 EIGHT HOUR MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR. 1 EIGHT HOUR BEER, 1 CAR. 1 EIGHT BEER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR. 1 EIGHT BEER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR 1 EIGHT DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 MIXED DRINK, 1 SHOT, HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 MIXED DRINK, 1 SHOT, EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1 TIRED WORKER, 1 MIXED DRINK, 1 SHOT, 1 BEER, 1 CAR, 1 EIGHT HOUR DAY, 1

Never underestimate "just a few."
Buzzed driving is drunk driving.

NAVAL SAFETY CENTER

PRESERVING COMBAT READINESS
SAVING LIVES

http://www.public.navy.mil/navsafecen